

Your pruner has been engineered and manufactured to our high standard for dependability, ease of operation, and operator safety. When properly cared for, it will give you years of rugged, trouble-free performance.

WARNING: To reduce the risk of injury, the user must read and understand the operator's manual before using this product.

Thank you for your purchase.

SAVE THIS MANUAL FOR FUTURE REFERENCE

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INTRODUCTION

This product has many features for making its use more pleasant and enjoyable. Safety, performance, and dependability have been given top priority in the design of this product, making it easy to maintain and operate.

GENERAL SAFETY RULES

Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

READ ALL INSTRUCTIONS

- For safe operation, read and understand all instructions before using this product. Follow all safety instructions. Failure to follow all safety instructions listed below, can result in serious personal injury.
- Do not allow children or untrained individuals to use this unit.
- Never let anyone use the machine who has not received adequate instructions in the machine's proper use. This applies to rentals as well as privately owned units and also to the power head it is attached to.
- Always wear safety glasses with side shields. Everyday glasses have only impact resistant lenses. They are NOT safety glasses. Following this rule will reduce the risk of eye injury.
- Product users on United States Forest Service land, and in some states, must comply with fire prevention regulations. This product is equipped with a spark arrestor; however, other user requirements may apply. Check with your federal, state, or local authorities.
- Wear heavy, long pants, boots, and gloves. Do not wear loose fitting clothing, short pants, or go barefoot. Do not wear jewelry of any kind. Wear hearing protection.
- Heavy protective clothing may increase operator fatigue, which could lead to heat stroke. During weather that is hot and humid, heavy work should be scheduled for early morning or late afternoon hours when temperatures are cooler.
- Never operate this unit on the operator's left side.
- Secure long hair above shoulder level to prevent entanglement in moving parts.
- Keep all bystanders, children, and pets at least 50 ft. away. Bystanders should be encouraged to wear eye protection. If you are approached, stop the engine and cutting attachment. In the case of bladed units, there is the added risk of injury to bystanders from being struck with the moving blade in the event of a blade thrust or other unexpected reaction of the saw.
- Do not operate this unit when you are tired, ill, or under the influence of alcohol, drugs, or medication.
- Do not operate in poor lighting.
- Do not operate in rain or use in damp or wet environments.
- Keep firm footing and balance. Do not overreach. Overreaching can result in loss of balance or exposure to hot surfaces.
- Keep all parts of your body away from any moving part.
- To avoid hot surfaces, never operate the unit with the bottom of the engine above waist level.

- Do not touch area around the muffler or cylinder of the unit. These parts get hot from operation. Failure to heed this warning could result in possible serious personal injury.
- Carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, scabbard on the guide bar and saw chain, and the muffler away from your body.
- Always stop the engine and remove the spark plug wire before making any adjustments or repairs except for carburetor adjustments.
- Inspect the unit before each use for loose fasteners, fuel leaks, etc. Replace any damaged parts before use.
- The chain may rotate during carburetor adjustments.
- It has been reported that vibrations from hand-held tools may contribute to a condition called Raynaud's Syndrome in certain individuals. Symptoms may include tingling, numbness and blanching of the fingers, usually apparent upon exposure to cold. Hereditary factors, exposure to cold and dampness, diet, smoking and work practices are all thought to contribute to the development of these symptoms. It is presently unknown what, if any, vibrations or extent of exposure may contribute to the condition. There are measures that can be taken by the operator to possibly reduce the effects of vibration:
 - a) Keep your body warm in cold weather. When operating the unit wear gloves to keep the hands and wrists warm. It is reported that cold weather is a major factor contributing to Raynaud's Syndrome.
 - b) After each period of operation, exercise to increase blood circulation.
 - c) Take frequent work breaks. Limit the amount of exposure per day.
 - d) Keep the tool well maintained, fasteners tightened and worn parts replaced.

If you experience any of the symptoms of this condition, immediately discontinue use and see your physician about these symptoms.

- Mix and store fuel in a container approved for gasoline.
- Mix fuel outdoors where there are no sparks or flames. Wipe up any fuel spillage. Move 30 ft. away from refueling site before starting engine.
- Stop the engine and allow to cool before refueling or storing the unit.
- Allow the engine to cool, empty the fuel tank, and secure the unit from moving before transporting in a vehicle.
- Check for damaged parts. Before further use of the tool, any part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service dealer. Be sure the chain stops moving when the throttle trigger is released. Following this rule will reduce the risk of shock, fire, or serious injury.

SPECIFIC SAFETY RULES

Kickback is a dangerous reaction that can lead to serious injury. Kickback may occur when the moving chain contacts an object at the upper portion of the tip of the guide bar or when the wood closes in and pinches the chain in the cut. Contact at the upper portion of the tip of the guide bar can cause the chain to dig into the object and stop the chain for an instant. The result is a lightning-fast, reverse reaction which kicks the guide bar up and back toward the operator. If the chain is pinched along the top of the guide bar, the guide bar can be driven rapidly back toward the operator, which can cause loss of control and may result in serious injury. Do not rely exclusively upon the safety devices built into the product.

With a basic understanding of kickback, you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.

- Make sure that the area in which you are cutting is free from obstructions. Do not let the nose of the guide bar contact a log, branch, fence, or any other obstruction while you are operating the unit. Have a planned retreat path.
- Cut only when visibility and light are adequate for you to see clearly.
- Do not use on a ladder or unstable support. Always cut with both feet on solid ground to prevent being pulled off balance.
- To protect yourself from electrocution, do not operate within 50 feet of overhead electrical lines.
- Before starting the engine, make sure the chain is not contacting any object.
- Always cut with the engine running at full speed. Fully squeeze the throttle trigger and maintain a steady cutting speed.
- Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
- To protect yourself from falling branches, do not stand directly under the branch or limb being cut. This unit should not be held at an angle over 60° from ground level.
- Keep the handles dry, clean, and free of lubricant or fuel mixture.
- Shut off the engine and make sure the cutting attachment has stopped before setting the unit down.
- To prevent electrical shock or serious personal injury, do not use this product with any AC power head.

- Follow the sharpening and maintenance instructions for the saw chain.
- Use only the replacement guide bars and low kickback chains specified for the unit.
- Operate saw in well ventilated areas.
- Do not operate the saw with one hand! Serious injury to the operator, helpers, bystanders, or any combination of these persons may results from one hand operation. This saw is intended for two-handed use.
- Use extreme caution when cutting small sized brush and saplings because slender material may catch the saw chain and be whipped toward you or pull you off balance.
- When cutting a limb that is under tension, be alert for spring back so that you will not be struck when tension in wood fibers are released.
- Keep a good firm grip on the saw with both hands, the right hand on the rear and the left hand on the front handle, when the engine is running. Use a firm grip with thumbs and fingers encircling the chain saw handles. A firm grip will help you avoid kickback and maintain control of the saw. Don't let go.
- Do not operate a chain saw in a tree unless you have been specifically trained to do so.

REFUELING

- **FUEL IS HIGHLY FLAMMABLE.** Take precautions when using to reduce the chance of serious personal injury.
- Store fuel in a cool, well-ventilated area, safely away from spark and/or flame-producing equipment.
- Store fuel in containers specifically designed for this purpose.
- Only refuel outdoors and do not smoke while refueling.
- Add fuel before starting the engine. Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot.
- If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
- Replace all fuel tank and container caps securely.
- If the fuel tank has to be drained, do this outdoors.

SYMBOLS

Some of the following symbols may be used on this product. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the product better and safer.

| SYMBOL | NAME | DESIGNATION/EXPLANATION |
|--------|-----------------------------------|---|
| | Safety Alert | Precautions that involve your safety. |
| | Read The Operator's Manual | To reduce the risk of injury, user must read and understand operator's manual before using this product. |
| | Eye, Hearing, and Head Protection | Wear eye, hearing, and head protection when operating this equipment. |
| | Safety Footwear | Wear non-slip safety footwear when using this equipment. |
| | Gloves | Wear non-slip, heavy-duty protective gloves when handling the pole pruner attachment and the saw chain. |
| | Moving Parts | Keep hands away from moving parts. |
| K | Keep Bystanders Away | Keep all bystanders at least 50 ft. away. |
| | Kickback | DANGER! Beware of kickback. |
| | Hot Surface | To reduce the risk of injury or damage, avoid contact with any hot surface. |
| | Risk of Electrocution | DANGER! Risk of electrocution! |
| | Gasoline and Lubricant | Use unleaded gasoline intended for motor vehicle use with an octane rating of 87 [($R + M$)/2] or higher. This product is powered by a 2-cycle engine and requires pre-mixing gasoline and 2-cycle lubricant. |

SYMBOLS

| The following signal words | and maaninga are intended | l ta avalain tha lavala af rial | cooported with this product |
|----------------------------|---------------------------|---------------------------------|-------------------------------|
| The following signal words | and meanings are intended | i lo explain lhe levels of rish | associated with this product. |
| | | | |

| SYMBOL | SIGNAL | MEANING |
|--------|----------|--|
| | DANGER: | Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury. |
| | WARNING: | Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury. |
| | CAUTION: | Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. |
| | CAUTION: | (Without Safety Alert Symbol) Indicates a situation that may result in property damage. |

SERVICE

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. For service we suggest you return the product to your nearest **AUTHORIZED SERVICE CENTER** for repair. When servicing, use only identical replacement parts.

WARNING:

To avoid serious personal injury, do not attempt to use this product until you read thoroughly and understand completely the operator's manual. If you do not understand the warnings and instructions in the operator's manual, do not use this product. Call Ryobi customer service for assistance.

WARNING:



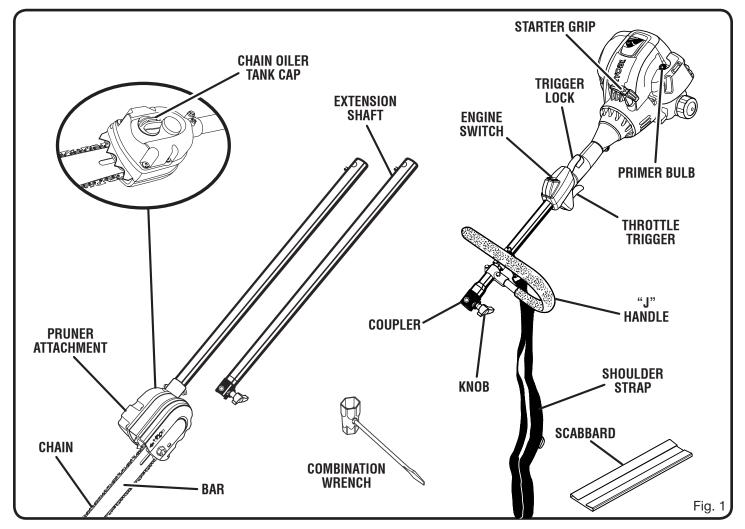
The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool operation, always wear safety goggles or safety glasses with side shields and, when needed, a full face shield. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always use eye protection which is marked to comply with ANSI Z87.1.

SAVE THESE INSTRUCTIONS

FEATURES

PRODUCT SPECIFICATIONS

| Engine Displacement | 30cc |
|---------------------|--------|
| Bar length | 10 in. |
| Weight | |



KNOW YOUR PRUNER

See Figure 1.

Before attempting to use this product, familiarize yourself with all operating features and safety rules.

ENGINE SWITCH

The engine switch controls the ignition system. The switch must be in the ON (I) position for the engine to start and run.

"J" HANDLE

Using the "J" handle allows better control of the pruner to maximize operator safety.

PRIMER BULB

The priming bulb pumps fuel from the fuel tank to the carburetor. This is necessary only when starting a cold engine or after refueling an engine that has run out of fuel.

SHOULDER STRAP

The shoulder strap helps support the weight of the pruner during use.

START LEVER

The start lever opens and closes the choke valve in the carburetor.

STARTER GRIP

The starter grip is used for starting the engine.

THROTTLE TRIGGER

The throttle trigger is used for starting the pruner, and also for controlling blade rotation.

ASSEMBLY

UNPACKING

This product requires assembly.

- Carefully remove the tool and any accessories from the box. Make sure that all items listed in the packing list are included.
- Inspect the tool carefully to make sure no breakage or damage occurred during shipping.
- Do not discard the packing material until you have carefully inspected and satisfactorily operated the tool.
- If any parts are damaged or missing, please call 1-800-860-4050 for assistance.

PACKING LIST

Power Head Assembly **Pruner Attachment Extension Shaft** Scabbard Combination Wrench (5/8 in. x 3/4 in.) 8 oz. Bar and Chain Lubricant Bottle of 2-cycle Lubricant Shoulder Strap Hanger (with mounting hardware) Shoulder Strap "J" Handle Assembly: "J" Handle Top and Bottom Clamp Short Bolt Long Bolt Flat Washers (2) Lock Washers (2)

Nuts (2) Hanger Cap Operator's Manual

WARNING:

If any parts are damaged or missing do not operate this tool until the parts are replaced. Failure to heed this warning could result in serious personal injury.

WARNING:

Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious personal injury.

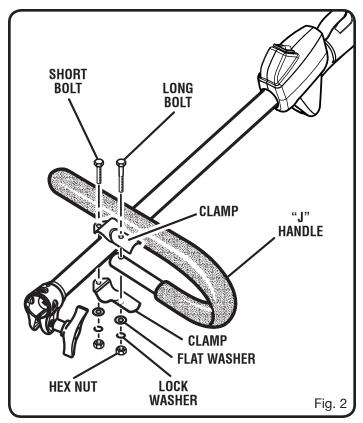
WARNING:

To prevent accidental starting that could cause serious personal injury, always disconnect the engine spark plug wire from the spark plug when assembling parts.

ATTACHING THE "J" HANDLE

See Figure 2.

- Hold the top and bottom clamp snugly in position on the shaft housing so that the handle will be located to the operator's left.
- Insert the end of the handle between the clamps.
- Align the bolt holes and push the long bolt (1/4-20 x 1-1/2 in.) through the handle side.
- Place short bolt (1/4-20 x 1 in.) through opposite side of the clamp. Install the flat washer, lock washers, and hex nuts to hold the assembly in place.
- After assembly is complete, adjust the position of the handle for best balance and comfort.
- Tighten the long bolt first and then the short bolt.



INSTALLING THE SHOULDER STRAP AND HANGER

See Figure 3.

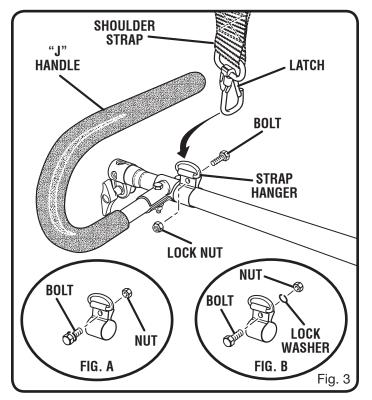
When operating this unit, you must wear a shoulder strap to support the unit.

To install the shoulder strap hanger:

- Remove the hex nut, lock washer, and bolt from the shoulder strap hanger.
- Pull apart the ends of the hanger to expand slightly.
- Slide the hanger over the power head shaft immediately behind the "J" handle.
- Squeeze hanger ends together to retighten.

ASSEMBLY

- Reinstall the bolt, lock washer, and hex nut to secure.
- Connect the latch on the shoulder harness to the strap hanger.



CONNECTING THE POWER HEAD TO THE EXTENSION SHAFT AND PRUNER ATTACH-MENT

See Figure 4.

The pruner attachment connects to the power head, or for extra reach to an extension shaft, by means of a coupler device.

To install the attachment:

- Loosen the knob on the coupler of the power head shaft and remove the end cap from the attachment.
- Push in the button located on the shaft of the pruner attachment. Align the button with the guide recess on the extension shaft coupler and slide the two shafts together. Rotate extension shaft until button locks into the positioning hole.

NOTE: The attachment should only be operated with the blade in a vertical position. If the button does not release completely in the positioning hole, the shaft is not locked into place. Slightly rotate from side to side until the button is locked into place.

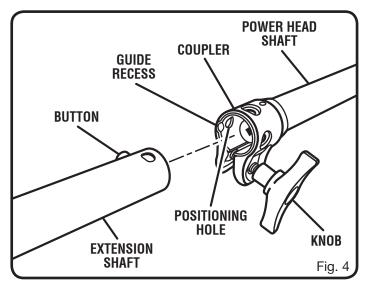
- Tighten the knob securely.
- Repeat previous steps to attach extension shaft to power head.

WARNING:

Be certain the knob is fully tightened before operating equipment; check it periodically for tightness during use to avoid serious injury.

To remove:

- Loosen the knob.
- Push in the button and twist the shafts to remove and separate ends.



AUTOMATIC BAR AND CHAIN LUBRICATION

Add bar and chain lubricant in the bar lube reservoir before starting the engine of the power head. Refer to **Automatic bar and chain lubrication** in the *Maintenance* section of this manual.

FUELING AND REFUELING THE PRUNER FUEL MIXTURE

This product is powered by a 2-cycle engine and requires pre-mixing gasoline and 2-cycle lubricant. Pre-mix unleaded gasoline and 2-cycle engine lubricant in a clean 1 gallon container approved for gasoline.

- This engine is certified to operate on unleaded gasoline intended for automotive use.
- Mix high quality 2-cycle engine lubricant at 2.6 oz. per gallon.
- Do not use automotive lubricant or 2-cycle outboard lubricant.
- DO NOT mix quantities larger than usable in a 30-day period.

| ſ | PREMIUM EXACT MIX™ (50:1) | | |
|---------|---------------------------|---------------|--|
| (\mp) | GASOLINE | LUBRICANT | |
| | 1 Gallon (US) | 2.6 oz. | |
| | 1 Liter | 20 cc (20 ml) | |

ASSEMBLY

FILLING TANK

- Clean surface around fuel cap to prevent contamination.
- Loosen fuel cap slowly. Rest the cap on a clean surface.
- Carefully pour fuel into the tank. Avoid spillage.
- Prior to replacing the fuel cap, clean and inspect the gasket.
- Immediately replace fuel cap and hand tighten. Wipe up any fuel spillage.

NOTE: It is normal for smoke to be emitted from a new engine after first use.

A WARNING:

Always shut off engine before fueling. Never add fuel to a machine with a running or hot engine. Move at least 30 ft. from refueling site before starting the engine. Do not smoke! Failure to heed this warning could result in serious personal injury.

OXYGENATED FUELS

Some conventional gasolines are blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If using an oxygenated fuel, make sure it is unleaded and meets the minimum octane rating requirements. Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces require this information to be posted on the pump. The following are the EPA approved percentages of oxygenates:

Ethanol (ethyl or grain alcohol) 10% by volume. You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol." **Do not use E85 fuel.**

MTBE (methyl tertiary butyl ether) 15% by volume. You may use gasoline containing up to 15% MTBE by volume.

Methanol (methyl or wood alcohol) 5% by volume. You may use gasoline containing up to 5% methanol by volume as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of the product or your fuel system.

If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline.

NOTE: Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates stated previously are not covered under warranty.

OPERATION

WARNING:

Do not allow familiarity with this product to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.

WARNING:

Always wear safety goggles or safety glasses with side shields, a hard hat, and safety shoes when operating power tools. Failure to do so could result in objects being thrown into your eyes, resulting in possible serious injury.

WARNING:

Do not use any attachments or accessories not recommended by the manufacturer of this product. The use of attachments or accessories not recommended can result in serious personal injury.

A WARNING:

To avoid kickback, binding of the saw bar, and possible injury, never cut limbs that the pruner does not reach when supported by the shoulder strap.

APPLICATIONS

You may use this product for the purposes listed below:

- Limbing
- Pruning

PREPARATION FOR CUTTING

See Figures 5 - 6.

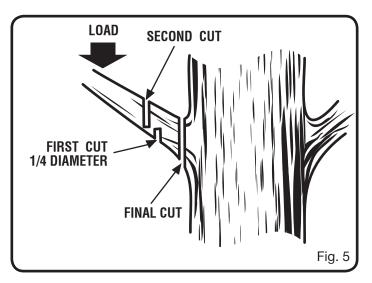
- Wear non-slip gloves for maximum grip and protection.
- Maintain a proper grip on the unit whenever the engine is running. Use your right hand to firmly grip the rear handle while your left hand has a firm grip on the front handle.

- Hold unit firmly with both hands. Always keep your left hand on the front handle and your right hand on the rear handle, so your body is to the left of the chain line. Never use a left-handed (cross-handed) grip, or any stance that places your body or arm across the chain line.
- Never stand directly under the limb you are cutting.
- Always wear shoulder strap for increased safety and to support the pruner.
- Be certain the knob is fully tightened before operating equipment; check it periodically for tightness during use to avoid serious injury.

BASIC CUTTING PROCEDURE

Follow the steps below to prevent damage to tree or shrub bark. Do not use a back-and-forth sawing motion.

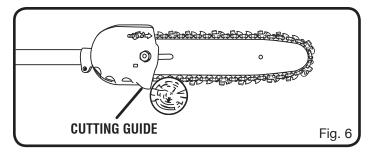
- Accelerate the engine to full throttle just before entering the cut by squeezing the throttle trigger. Keep the engine at full throttle the entire time you are cutting.
- Make a shallow first cut (1/4 of limb diameter) on the underside of the limb close to the main limb or trunk.
- Make a second cut from the top side of the limb outboard from the first cut.
- Make a final cut close to trunk.



OPERATION

NOTE: For second and final cuts (from top of limb or branch), hold front cutting guide against the limb being cut. This will help steady the limb and make it easier to cut. Allow chain to cut for you; exert only light downward pressure. If you force the cut, damage to the bar, chain, or engine can result.

Release the trigger as soon as the cut is completed, allowing the engine to idle. If you run the pruner at full throttle without a cutting load, unnecessary wear or damage can occur to the chain, bar, and engine.



Failure to follow proper cutting procedures will result in the bar and chain binding and becoming pinched or trapped in the limb. If this should happen:

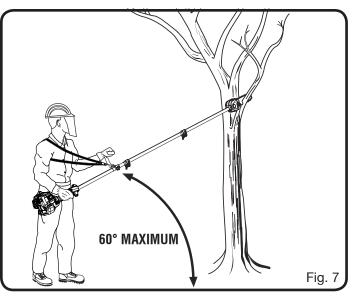
- Stop the engine.
- Loosen the knob on the coupler.
- Depress the button on the shaft; twist and pull the shafts to separate the pruner from the power head.
- If the limb can be reached from the ground, lift the limb while holding the attachment. This should release the "pinch" and free the pruner.
- If the pruner is still trapped, call a professional for assistance.

LIMBING AND PRUNING

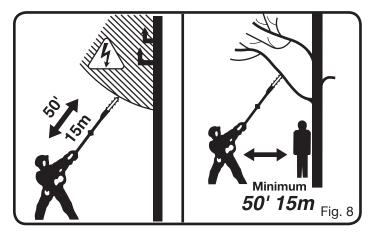
See Figures 7 - 8.

This unit is designed for trimming small branches and limbs up to 6 in. in diameter. For best results, observe the following precautions.

- Plan the cut carefully. Be aware of the direction in which the branch will fall.
- Branches may fall in unexpected directions. Do not stand directly under the branch being cut.
- The most typical cutting application is to position the unit at an angle of 60° or less, depending on the specific situation, as shown. As the angle of the pruner shaft to ground increases, the difficulty of making the first cut (from the underside of limb) increases.
- Remove long branches in several stages.
- Cut lower branches first to allow the top branches more room to fall.



- Work slowly, keeping both hands on the saw with a firm grip. Maintain secure footing and balance.
- Keep the tree between you and the chain while limbing. Cut from side of tree opposite branch you are cutting.
- Do not cut from a ladder; this is extremely dangerous. Leave this operation for professionals.
- Do not make the flush cut next to the main limb or trunk until you have cut off the limb further out to reduce the weight. Following proper cutting procedures will prevent stripping the bark from the main member.
- Do not use the pruner for felling or bucking.
- To prevent electrocution, do not operate within 50 ft. of overhead electrical lines.
- Keep bystanders at least 50 ft. away.

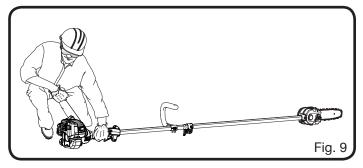


OPERATION

POSITION FOR STARTING

See Figure 9.

Lay the pruner on the ground and ensure that no objects or obstructions are in the immediate vicinity. Make sure nothing can come in contact with the bar and chain.



STARTING AND STOPPING

See Figures 10 - 12.

To start a cold engine:

DO NOT squeeze the throttle trigger until the engine starts and runs.

- Lay the trimmer on a flat, bare surface.
- PRIME Press the primer bulb 7 times.
- SET the start lever to the START position.
- PULL the rope until the engine starts.
- Allow the engine to run for 6-10 seconds.
- Squeeze trigger lock and throttle trigger.

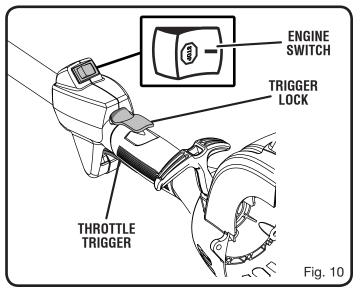
NOTE: Squeezing and releasing the throttle trigger releases the start lever to the RUN position.

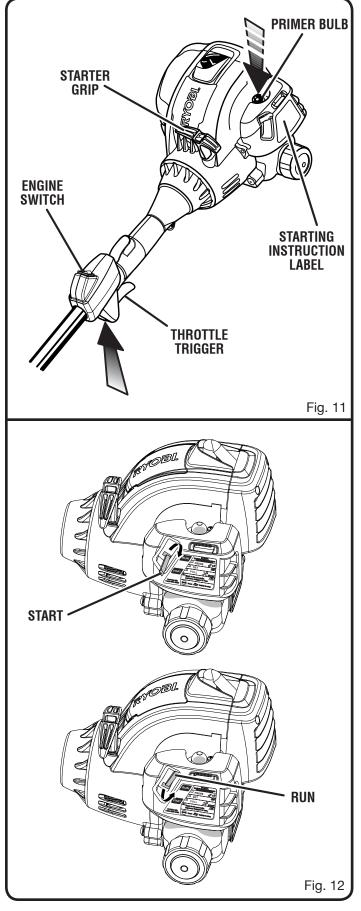
To start a warm engine:

PULL the rope until the engine starts.

To stop the engine:

Press and hold the switch in the stop " $\textcircled{\mbox{\scriptsize \ensuremath{\boxdot}}}$ " position until the engine stops.





WARNING:

When servicing, use only identical replacement parts. Use of any other parts may create a hazard or cause product damage.

WARNING:

Always wear safety goggles or safety glasses with side shields during power tool operation or when blowing dust. If operation is dusty, also wear a dust mask.

A WARNING:

Before inspecting, cleaning or servicing the unit (except for carburetor adjustments), shut off engine, wait for all moving parts to stop, and disconnect spark plug wire and move it away from spark plug. Failure to follow these instructions can result in serious personal injury or property damage.

GENERAL MAINTENANCE

Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean cloths to remove dirt, dust, lubricant, grease, etc.

WARNING:

Do not at any time let brake fluids, gasoline, petroleumbased products, penetrating lubricant, etc., come in contact with plastic parts. Chemicals can damage, weaken, or destroy plastic, which may result in serious personal injury.

All chain saw service, other than the items listed in the instruction manual maintenance instructions, should be performed by competent chain saw service personnel. (For example, if improper tool is used to hold the flywheel in order to remove the clutch, structural damage to the flywheel could occur and subsequently could cause the flywheel to burst).

CHAIN TENSION

See Figures 13 - 14.

WARNING:

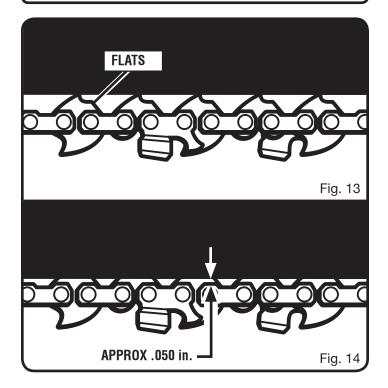
To avoid possible serious injury, never touch or adjust the chain while the motor is running. The saw chain is very sharp; always wear protective gloves when performing maintenance to the chain. Stop the engine before setting the chain tension. Make sure the guide bar nut is loose to finger tight, turn the chain tensioning screw clockwise to tension the chain. Refer to **Replacing the Bar and Chain** for additional information.

NOTE: A cold chain is correctly tensioned when there is no slack on the underside of the guide bar, the chain is snug, but it can be turned by hand without binding.

- Chain must be re-tensioned whenever the flats on the drive links hang out of the bar groove as shown in figure 13.
- During normal operation, the temperature of the chain will increase. The drive links of a correctly tensioned warm chain will hang approximately .050 in. out of the bar groove, as shown in figure 14.

NOTE: New chain tends to stretch; check chain tension frequently and tension as required.

Chain tensioned while warm, may be too tight upon cooling. Check the "cold tension" before next use.



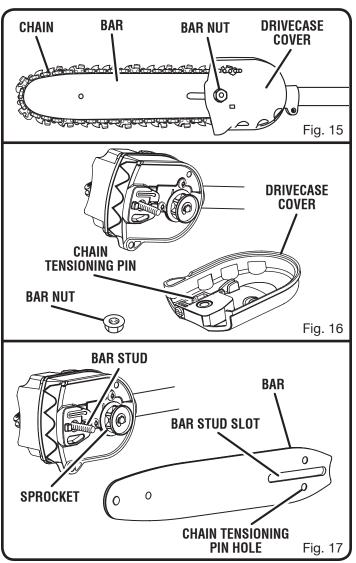
REPLACING THE BAR AND CHAIN

See Figures 15 - 20.

WARNING:

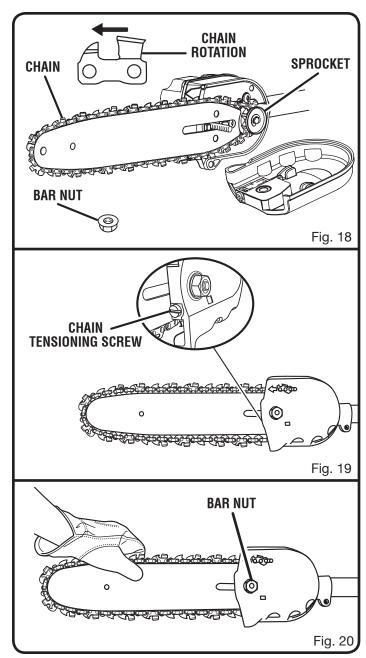
To avoid possible serious injury, stop engine before replacing the bar, chain, or performing any maintenance operation.

- Remove the bar nut and drivecase cover.
- The bar contains a bar stud slot that fits over the bar stud. The bar also contains a chain tensioning pin hole which fits over the chain tensioning pin.
- Place the bar onto the bar stud so that the chain tensioning pin fits into the chain tensioning pin hole.
- Fit the chain over the sprocket and into the bar groove. The cutters on the top of the bar should face toward the bar tip, in the direction of the chain rotation.
- Replace the drivecase cover and install the bar nut. Tighten the bar nut finger tight only. The bar must be free to move for tension adjustment.



- Remove all slack from chain by turning the chain tensioning screw clockwise, assuring that the chain seats into the bar groove during tensioning.
- Lift the tip of the bar up to check for sag. Release the tip of the bar, and turn the chain tensioning screw 1/2 turn clockwise. Repeat this process until sag does not exist.
- Hold the tip of the bar up and tighten the bar nut securely.
- Chain is correctly tensioned when there is no slack on the underside of the bar, the chain is snug, but it can be turned by hand without binding.

NOTE: If chain is too tight, it will not rotate. Loosen the bar nut slightly and turn adjusting screw 1/4 turn counterclockwise. Lift the tip of the bar up and retighten bar nut.



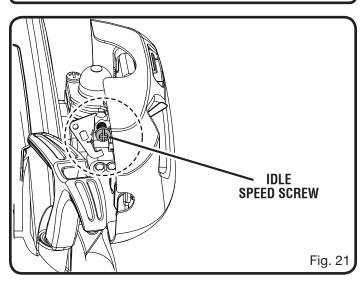
IDLE SPEED ADJUSTMENT

See Figure 21.

If the chain turns at idle, the idle speed screw needs adjusting on the engine. Turn the idle speed screw counterclockwise to reduce the idle RPM and stop the chain movement. If the saw chain still moves at idle speed, contact a service dealer for adjustment and discontinue use until the repair is made.

WARNING:

The saw chain should never turn at idle. Turn the idle speed screw counterclockwise to reduce the idle RPM and stop the chain, or contact a service dealer for adjustment and discontinue use until the repair is made. Serious personal injury may result from the saw chain turning at idle.

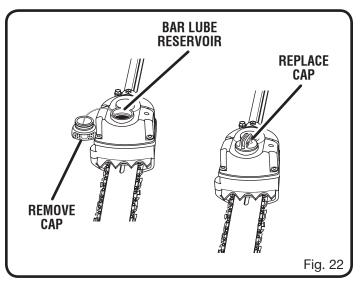


AUTOMATIC BAR AND CHAIN LUBRICATION

See Figure 22.

- Use Premium Bar and Chain Lubricant. It is designed for chains and chain oilers and is formulated to perform over a wide temperature range with no dilution required.
- Remove the cap and carefully pour approximately 8 oz. of bar and chain lubricant into the bar lube reservoir.
- Replace the cap and tighten securely.
- Check and refill the bar lube reservoir every time the engine is fueled.

NOTE: Do not use dirty, used or otherwise contaminated lubricant. Damage may occur to the oil pump, bar, or chain.



CHAIN MAINTENANCE

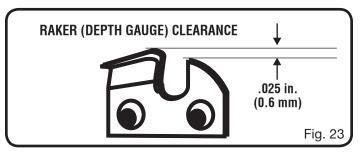
See Figure 23.

For smooth and fast cutting, the chain needs to be maintained properly. The following conditions indicate that the chain requires sharpening:

- Wood chips are small and powdery
- Chain must be forced through the wood during cutting
- Chain cuts to one side

During maintenance of the chain, consider the following:

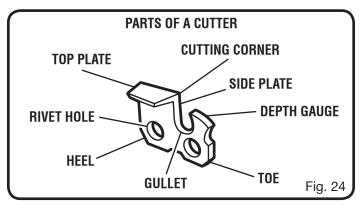
- Improper filing angle of the side plate can increase the risk of a severe kickback.
- Depth gauge (or raker clearance) setting determines the height the cutter enters the wood and the size of the wood chip that is removed. Too much clearance increases the potential for kickback. Too little clearance decreases the size of the wood chip thus decreasing the chain's cutting ability.
- If cutter teeth have hit hard objects such as nails and stones, or have been abraded by mud or sand on the wood, have service dealer sharpen chain.



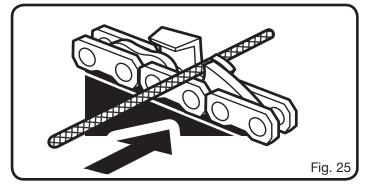
HOW TO SHARPEN THE CUTTERS

See Figures 24 - 27.

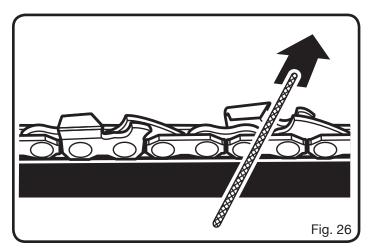
Be careful to file all cutters to the specified angles and to the same length, as fast cutting can be obtained only when all cutters are uniform.



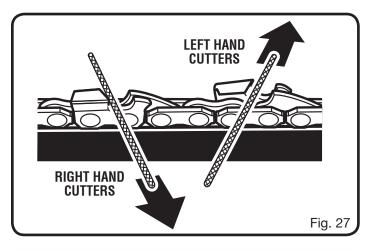
- Tighten the chain tension enough that the chain does not wobble. Do all of your filing at the mid-point of the bar. Wear gloves for protection.
- Use a 5/32 in. diameter round file and holder.
- Keep the file level with the top plate of the tooth. Do not let the file dip or rock.



Using light but firm pressure, stroke towards the front corner of the tooth. Lift file away from the steel on each return stroke.



Put a few firm strokes on every tooth. File all left hand cutters in one direction. Then move to the other side and file the right hand cutters in the opposite direction. Occasionally remove filings from the file with a wire brush.



CAUTION:

Dull or improperly sharpened chain can cause excessive engine speed during cutting which may result in severe engine damage.

WARNING:

Improper chain sharpening increases the potential of kickback. Failure to replace or repair damaged chain can cause serious injury.

CLEANING THE EXHAUST PORT AND MUFFLER

Depending on the type of fuel used, the type and amount of lubricant used, and/or your operating conditions, the exhaust port and muffler may become blocked with carbon deposits. If you notice a power loss with your gas powered tool, a qualified service technician will need to remove these deposits to restore performance.

SPARK ARRESTOR

The spark arrestor must be replaced every 50 hours or yearly to ensure proper performance of the product. Spark arrestors may be in different locations depending on the model purchased. Please contact the nearest service dealer for the location of the spark arrestor for your model.

CLEANING AIR FILTER SCREEN

See Figure 28-29.

For proper performance and long life, keep air filter clean.

- Remove the air filter cover by pushing down on the latch with your thumb while gently pulling on the cover.
- Brush the air filter screen lightly to clean.
- Replace the air filter cover by inserting the tabs on the bottom of the cover into the slots on the air filter base; push the cover up until it latches securely in place.

NOTE: For best performance, replace annually.

FUEL CAP

WARNING:

A leaking fuel cap is a fire hazard and must be replaced immediately.

The fuel cap contains a non-serviceable filter and a check valve. A clogged fuel filter will cause poor engine performance. If performance improves when the fuel cap is loosened, check valve may be faulty or filter clogged. Replace fuel cap if required.

SPARK PLUG REPLACEMENT

This engine uses a Champion RCJ6Y with .025 in. electrode gap. Use an exact replacement and replace annually.

STORING THE PRODUCT

See Figure 30.

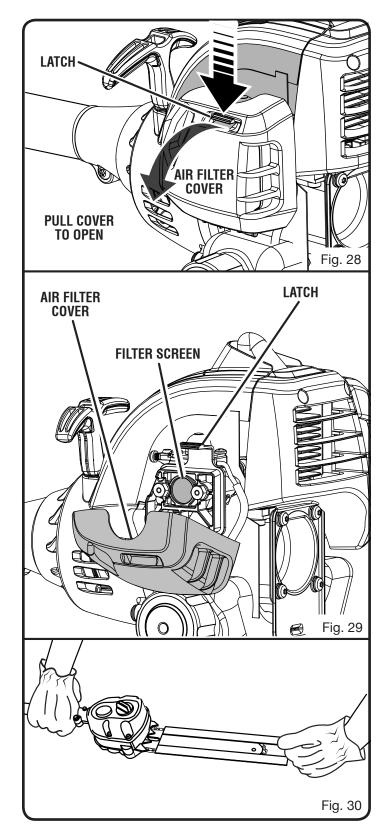
- Clean all foreign material from the product. Store idle unit indoors in a dry, well-ventilated area that is inaccessible to children. Keep away from corrosive agents such as garden chemicals and de-icing salts.
- Abide by all ISO and local regulations for the safe storage and handling of gasoline.
- Always place the scabbard on the saw bar when transporting or storing the pruner. The scabbard is a snug fit and must be attached very carefully due to the sharp teeth on the saw chain. This is best done by grasping the scabbard at one end, in the center portion of the scabbard, and carefully sliding it over the chain as shown. Use caution to avoid the sharp teeth of the chain.

NOTE: The saw chain is very sharp. Always wear protective gloves when handling the chain.

To use the hanger cap, push in the button and place the hanger cap over end of the lower end attachment shaft. Slightly rotate the cap from side to side until the button locks into place.

When storing 1 month or longer:

Drain all fuel from tank into a container approved for gasoline. Run engine until it stops.



TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | REMEDY |
|--|---|--|
| Engine will not start. | No spark. | Clean or replace spark plug. Reset spark plug gap. Refer to Spark Plug Replacement earlier in this manual. |
| | No fuel. | Push primer bulb until bulb is full of fuel. If bulb does not fill, primary fuel delivery system is blocked. Contact a servicing dealer. If primer bulb fills, engine may be flooded, proceed to next item. |
| | Engine is flooded. | Pull starter three times with choke lever at "RUN". If engine does not start, move choke lever to "START" and repeat normal starting procedure. If engine still fails to start, repeat procedure with a new spark plug. |
| | Starter rope pulls harder now than when new. | Contact a servicing dealer. |
| Engine starts but will not accelerate. | Engine requires approxi- mately three minutes to warm up. | Allow engine to completely warm up. If engine does not accelerate after three minutes, contact a servicing dealer. |
| Engine starts but will only run at high speed at half choke. | Carburetor requires adjustment. | Contact a servicing dealer. |
| Engine does not reach full speed and emits | Check lubricant fuel mixture. | Use fresh fuel and the correct 2-cycle lubricant mix. |
| excessive smoke. | Air filter screen is dirty. | Clean air filter screen. Refer to Cleaning Air Filter Screen earlier in this manual. |
| | Spark arrestor screen is dirty. | Contact a servicing dealer. |
| Engine starts, runs, and accelerates but will not idle. | Idle speed screw on carburetor | Turn idle speed screw clockwise to increase idle speed. |
| Bar and chain running hot and smoking. | Check chain tension for overtightened condition | Tension chain. Refer to Chain Tension earlier in this manual. |
| | Chain oil tank empty | Check oil tank. |
| Motor runs, but chain | Chain tension too tight. | Retention chain. Refer to Chain Tension earlier in this manual. |
| is not rotating. | Check guide bar and chain assembly. | Refer to Replacing the Bar and Chain earlier in this manual. |
| | Check guide bar and chain for damage. | Inspect guide bar and chain for damage. |

LIMITED WARRANTY STATEMENT

Techtronic Industries North America, Inc., warrants to the original retail purchaser that this RYOBI® brand outdoor product is free from defect in material and workmanship and agrees to repair or replace, at Techtronic Industries North America, Inc.'s, discretion, any defective product free of charge within these time periods from the date of purchase.

- Two years if the product is used for personal, family or household use;
- 90 days, if used for any other purpose, such as commercial or rental.

This warranty extends to the original retail purchaser only and commences on the date of the original retail purchase.

Any part of this product found in the reasonable judgment of Techtronic Industries North America, Inc. to be defective in material or workmanship will be repaired or replaced without charge for parts and labor by an authorized service center for RYOBI® brand outdoor products (Authorized Ryobi Service Center).

The product, including any defective part, must be returned to an authorized RYOBI service center within the warranty period. The expense of delivering the product to the service center for warranty work and the expense of returning it back to the owner after repair or replacement will be paid by the owner. Techtronic Industries North America, Inc.'s, responsibility in respect to claims is limited to making the required repairs or replacements and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any RYOBI® brand outdoor product. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work must be performed by an authorized service dealer.

This warranty is limited to ninety (90) days from the date of original retail purchase for any RYOBI® brand outdoor product that is used for rental or commercial purposes, or any other income-producing purpose.

This warranty does not cover any product that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in this operator's manual. This warranty does not apply to any damage to the product that is the result of improper maintenance or to any product that has been altered or modified. The warranty does not extend to repairs made necessary by normal wear or by the use of parts or accessories which are either incompatible with the RYOBI® brand outdoor product or adversely affect its operation, performance, or durability. In addition, this warranty does not cover:

- A. Tune-ups Spark Plugs, Carburetor, Carburetor Adjustments, Ignition, Filters
- B. Wear items Bump Knobs, Outer Spools, Cutting Lines, Inner Reels, Starter Pulleys, Starter Ropes, Drive Belts, Tines, Felt Washers, Hitch Pins, Mulching Blades, Blower Fans, Blower and Vacuum Tubes, Vacuum Bag and Straps, Guide Bars, Saw Chains

Techtronic Industries North America, Inc., reserves the right to change or improve the design of any RYOBI® brand outdoor product without assuming any obligation to modify any product previously manufactured.

ALL IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE STATED WARRANTY PERIOD. ACCORDINGLY, ANY SUCH IMPLIED WARRANTIES INCLUDING MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, ARE DISCLAIMED IN THEIR ENTIRETY AFTER THE EXPIRATION OF THE APPROPRIATE TWO-YEAR, ONE-YEAR, OR NINETY-DAY WARRANTY PERIOD. TECHTRONIC INDUSTRIES NORTH AMERICA, INC.'S, OBLIGATION UNDER THIS WARRANTY IS STRICTLY AND EXCLUSIVELY LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS AND TECHTRONIC INDUSTRIES NORTH AMERICA, INC., DOES NOT ASSUME OR AUTHORIZE ANYONE TO ASSUME FOR THEM ANY OTHER OBLIGATION. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. TECHTRONIC INDUSTRIES NORTH AMERICA, INC., ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL, OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, EXPENSE OF RETURNING THE PRODUCT TO AN AUTHORIZED RYOBI SERVICE CENTER AND EXPENSE OF DELIVERING IT BACK TO THE OWNER, MECHANIC'S TRAVEL TIME, TELEPHONE OR TELEGRAM CHARGES, RENTAL OF A LIKE PRODUCT DURING THE TIME WARRANTY SERVICE IS BEING PERFORMED, TRAVEL, LOSS OR DAMAGE TO PERSONAL PROPERTY, LOSS OF REVENUE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, OR INCONVENIENCE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty applies to all RYOBI® brand outdoor products manufactured by or for Techtronic Industries North America, Inc., and sold in the United States and Canada.

To locate your nearest Authorized Ryobi Service Center, dial 1-800-860-4050.

WARRANTY

THE FOLLOWING CALIFORNIA AIR RESOURCES BOARD (CARB) STATEMENT ONLY APPLIES TO MODEL NUM-BERS REQUIRED TO MEET THE CARB REQUIREMENTS.

TECHTRONIC INDUSTRIES NORTH AMERICA, INC., LIMITED WARRANTY STATEMENT FOR FEDERAL AND CALIFORNIA EMISSION CONTROL SYSTEMS NON-ROAD AND SMALL OFF-ROAD ENGINES YOUR WARRANTY RIGHTS AND OBLIGATIONS

The U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and Techtronic Industries North America, Inc., are pleased to explain the Emissions Control System Warranty on your 2008 model year non-road or small off-road engine. In California, new equipment that uses small off-road engines must be designed, built, and equipped to meet the state's stringent anti-smog standards. In other states, new 2000 and later model year non-road engines must be designed, built, and equipped at the time of sale to meet the U.S. EPA regulations for small non-road engines. The non-road engine must be free from defects in materials and workmanship which cause it to fail to conform with U.S. EPA standards for the first two years of engine use from the date of sale to the ultimate purchaser. Techtronic Industries North America, Inc., must warrant the emission control system on your non-road or small off-road engine for the period of time listed above provided there has been no abuse, neglect, or improper maintenance of your non-road or small off-road engine.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, catalytic converters, fuel tanks, valves, filters, clamps, connectors, and other associated components. Also included may be hoses, belts and connectors, and other emission-related assemblies.

Where a warrantable condition exists, Techtronic Industries North America, Inc., will repair your non-road or small off-road engine at no cost to you, including diagnosis, parts, and labor performed at an authorized service center for RYOBI® brand outdoor products.

MANUFACTURER'S WARRANTY COVERAGE:

This product's emissions control system is warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by Techtronic Industries North America, Inc., free of charge.

OWNER'S WARRANTY RESPONSIBILITIES

(a) As the non-road or small off-road engine owner, you are responsible for the performance of the required maintenance listed in your operator's manual. Techtronic Industries North America, Inc., recommends that you retain all receipts covering maintenance on your non-road or small off-road engine, but Techtronic Industries North America, Inc., cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance. Any replacement part or service that is equivalent in performance and durability may be used in non-warranty maintenance or repairs, and shall not reduce the warranty obligations of Techtronic Industries North America, Inc. (b) As the non-road or small off-road engine owner, you should be aware, however, that Techtronic Industries North America, Inc., may deny you warranty coverage if your non-road or small off-road engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.

(c) You are responsible for presenting your non-road or small off-road engine to an authorized service dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a Techtronic Industries North America, Inc., Customer Representative at 1-800-860-4050.

DEFECT WARRANTY COVERAGE REQUIREMENTS:

(a) The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser.

(b) General Emissions Warranty Coverage. Techtronic Industries North America, Inc., warrants to the ultimate purchaser and each subsequent purchaser that your non-road or small off-road engine is designed, built, and equipped at the time of sale to conform with all applicable regulations adopted by the California Air Resources Board or the United States Environmental Protection Agency; and that it is free from defects in materials and workmanship which cause the engine to fail to conform with applicable regulations for a period of two years from the date the non-road or small off-road engine is purchased by the initial purchaser.

(c) The warranty on emissions-related parts will be interpreted as follows: Any warranted part that is not scheduled for replacement as required in the Emissions Maintenance Schedule and Warranty Parts List set forth below is warranted for two years. If any such part (including any part that is scheduled only for regular inspection) fails during the period of warranty coverage, it will be repaired or replaced at any RYOBI® Authorized Service Center at no charge. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period. A statement to the effect of "repair or replace ancessary" would not reduce the period of warranty coverage. Any warranted part that is scheduled for replacement as required maintenance in the Emissions Maintenance Schedule and Warranty Parts List is warranted for the period of time prior to the first scheduled replacement point for that part. Any such part repaired or replaced under warranty is warranted for the remainder of the period prior to the first scheduled replacement point, and will be repaired or replaced at any RYOBI® Authorized Service Center for no charge until that replacement point is reached.

Techtronic Industries North America, Inc., shall remedy warranty defects at any authorized RYOBI® Authorized Service Center, including any distribution center that may be franchised to service the subject engines. Any diagnostic work done at a RYOBI® Authorized Service Center shall be free of charge to the owner if such work determines that a warranted part is defective. Any manufacturer-approved or equivalent replacement part may be used for any warranty maintenance or repairs on emission-related parts, and must be provided free of charge to the owner if the part is still under warranty. Techtronic Industries North America, Inc., is liable for damages to other engine components caused by the failure of a warranted part still under warranty.

Add-on or modified parts that are not exempted by the California Air Resource Board may not be used. The use of any non-exempted add-on or modified parts will be grounds for disallowing a warranty claim. Techtronic Industries North America, Inc., will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

The California Air Resources Board's Emission Warranty Parts List specifically defines the emission-related warranted parts. (EPA's regulations do not include a parts list, but the EPA considers emission-related warranted parts to include all the parts listed below.) Techtronic Industries North America, Inc., will provide any documents that describe its warranty procedures or policies within five days upon request by the California Air Resources Board.

EMISSIONS PARTS LIST

Emissions parts vary from product to product. Your emissions control system warranty applies to any of the following components that may be included on your product: (1) Fuel Metering System

- (i) Carburetor and internal parts (and/or pressure regulator or fuel injection system).
- (ii) Air/fuel ratio feedback and control system.
- (iii) Cold start enrichment system.
- (iv) Fuel Tank.
- (2) Air Induction System
 - (i) Controlled hot air intake system.
 - (ii) Intake manifold.
 - (iii) Air filter.
- (3) Ignition System
 - (i) Spark Plugs.
 - (ii) Magneto or electronic ignition system.
 - (iii) Spark advance/retard system.
- (4) Exhaust Gas Recirculation (EGR) System
 - (i) EGR valve body and carburetor spacer, if applicable.
- (ii) EGR rate feedback and control system.
- (5) Air Injection System
 - (i) Air pump or pulse valve.
 - (ii) Valves affecting distribution of flow.
 - (iii) Distribution manifold.
- (6) Catalyst or Thermal Reactor System
 - (i) Catalytic converter.
 - (ii) Thermal reactor.
 - (iii) Exhaust manifold.
- (7) Particulate Controls
 - Traps, filters, precipitators, and any other device used to capture particulate emissions.

(8) Miscellaneous Items Used in Above Systems

- (i) Electronic controls.
- (ii) Vacuum, temperature, and time sensitive valves and switches.

(iii) Hoses, belts, connectors, and assemblies.

Techtronic Industries North America, Inc., will furnish with each new engine written instructions for its maintenance and use by the owner.

The Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements. Category C=50 hours, B=125 hours, and A=300 hours.

WARRANTY

THIS PRODUCT WAS MANUFACTURED WITH A CATALYST MUFFLER

Congratulations! You have made an investment toward protecting the environment. In order to maintain this product's original emission level, please refer to the maintenance section below.

| EMISSIONS MAINTENANCE SCHEDULE AND WARRANTED PARTS LIST | | | | | |
|---|----------------------------|------------------------|--|--------------------------------------|---------------------------|
| Emissions Parts | Inspect Before Each Use | Clean Every 5 Hours | Replace Every 25 Hours or Yearly | Clean Every 25 Hours or Yearly | Replace Every 50 Hours |
| AIR FILTER ASSY includes: Filter Screen | ER ASSEMBLY | | | | X |
| FUEL TANK ASSY includes: | | | | | |
| Fuel Lines | X | | | | |
| Fuel Cap | X | | | | |
| IGNITION ASSY includes: | | | | | |
| Spark Plug | | | X | | |
| ALL EMISSIONS-RELATED PARTS ARE WARRANTED FOR TWO YEARS OR FOR THE PERIOD OF TIME PRIOR TO THE PARTS FIRST SCHEDULED REPLACEMENT WHICHEVER COMES FIRST. | | | | | |



CALL US FIRST

For any questions about operating or maintaining your product, call the Ryobi_® Help Line! Your product has been fully tested prior to shipment to ensure your complete satisfaction.

NOTES

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OPERATOR'S MANUAL TP30 GAS PRUNER BY52504/BY52905

WARNING:

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

CALIFORNIA PROPOSITION 65

• PARTS AND SERVICE

Prior to requesting service or purchasing replacement parts, please obtain your model and serial number from the product data plate.

MODEL NUMBER
 RY52504/RY52905

SERIAL NUMBER

• HOW TO OBTAIN REPLACEMENT PARTS:

Replacement parts can be purchased online at **www.ryobitools.com** or by calling 1-800-860-4050. Replacement parts can also be obtained at one of our Authorized Service Centers.

HOW TO LOCATE AN AUTHORIZED SERVICE CENTER:

Authorized Service Centers can be located online at **www.ryobitools.com** or by calling 1-800-860-4050.

• HOW TO OBTAIN CUSTOMER OR TECHNICAL SUPPORT: To obtain Customer or Technical Support please contact us at 1-800-860-4050.

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TECHTRONIC INDUSTRIES NORTH AMERICA, INC.

1428 Pearman Dairy Road Anderson, SC 29625 Phone 1-800-860-4050 www.ryobitools.com